

ABSTRACT OF THE DISCLOSURE

An improvement for a self-balancing shielded bipolar ionizer (U.S Patent 6,002,573), which uses pressurized air or nitrogen to increase performance, extend the operating distance range, and reduce cleaning frequency. An air assist assembly is inserted into the ion generation cavity, which directs pressurized air or nitrogen past the electrodes. In applications where little natural airflow exists, air assist technology is particularly useful. Ions are blown toward the target. This directs the ions to where they are needed, and delivers ions faster. Useful operating distances are increased. Faster delivery minimizes ion losses due to recombination. Furthermore, pure pressurized air protects the electrodes from impurities in the environmental air. Less chemical growth affects electrode performance. Hence, the ionizer exhibits more stable performance, plus the need for electrode cleaning is minimized.